REMARKS

In response to the Office Action mailed November 1, 2004, Applicant submits the following remarks.

Drawings

The Patent Office objected to the drawings under 37 C.F.R. § 1.83(a) for failing to show the first and second mutually exclusive control signals of claim 23. The Patent Office has indicated that the first and second mutually exclusive control signals were claimed in claim 12. However, this seems to have been in error since only claim 23 claims "mutually exclusive" control signals.

Applicant has amended claim 23 to read that the states of the control signal are mutually exclusive, rather than the control signals themselves. As shown in Figure 6, the control signal (TXADB) controls switching circuitry (switches 642 and 672) such that digital modulation signals are provided from the decoder to the divider circuit in response to a first state of the control signal and from a source (ex. digital interface 640) other than the decoder to the divider circuit in response to a second state of the control signal. The states of the control signal are mutually exclusive such that the digital modulation signals are provided to the divider circuit from either the decoder or the other source, but not both simultaneously. Thus, every feature of claim 23 is shown in the drawings, and the objection to the drawings should be withdrawn.

Claim Objections

The Patent Office objected to claims 1-23 because of informalities. Applicant has amended the claims to correct the informalities noted by the Patent Office. Applicant has also amended the claims to correct other typographical and antecedent basis issues. No new matter is added with these amendments. Thus, the objection to the claims should be withdrawn.

Claim Rejections – 35 U.S.C. § 112

The Patent Office rejected claims 3, 5, and 6 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Regarding claim 3, the Patent Office stated:

> [T]he use of the term "substantially" can not be definitively used to describe or limit an amount of equality with respect to a real number. One skilled in the art is not able to determine a definitive limitation provided by the term "substantially" as used in the claim. While the use of the term "substantially" may be considered to be definite when it takes a meaning such as "mostly", in this case, a definite interpretation may not be made. (emphasis added)

In *Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988), the court held that the limitation "which produces substantially equal E and H plane illumination patterns" was definite because one of ordinary skill in the art would know what was meant by "substantially equal." In *Andrews*, the court also stated:

> The criticized words ["approach each other," "close to," "substantially equal," and "closely approximate"] are ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject-matter to those of skill in the field of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts.

Further, in *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir., 1984), the court stated:

> Definiteness problems often arise when words of degree are used in a claim. That some claim language may not be precise, however, does not automatically render a claim invalid. When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree. The trial court must decide, that is, whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

Thus, the Patent Office's position that there is a *per se* prohibition of using the term "substantially" to describe or limit an amount of equality with respect to a real number is clearly incorrect. If the Patent Office is aware of case law or a MPEP section substantiating their position, Applicant respectfully requests that the Patent Office provide a citation to such case or MPEP section. Accordingly, the test for indefiniteness of the term "substantially" is whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

Amended claim 3 recites "said first plurality of threshold values comprises a value substantially equal to 0.7 times the positive peak value of said sequence of I analog modulation signals, and a value substantially equal to 0.7 times the negative peak value of said sequence of I analog modulation signals; and said second plurality of threshold values comprises a value substantially equal to 0.7 times the positive peak value of said sequence of Q analog modulation

signals, and a value substantially equal to 0.7 times the negative peak value of said sequence of Q analog modulation signals." In light of the specification, one of skill in the art would clearly understand what is being claimed. Based on the specification and through experimentation, one of ordinary skill in the art would be capable of determining a reasonable range around 0.7 corresponding to "substantially equal to 0.7" because the performance of the system would be adversely affected as the value was reduced or increased out of this reasonable range. Since one of ordinary skill in the art would be capable of determining the meaning of "substantially equal to 0.7" in light of the specification, claim 3 is not indefinite, and the rejection of claim 3 should be withdrawn.

Regarding claim 5, the Patent Office stated that "said modulation signals" is indefinite. Applicant has amended claim 5 to replace "said modulation signals" with "said sequences of I and Q analog modulation signals." Thus, claim 5 is no longer indefinite, and the rejection of claims 5 should be withdrawn. Further, since claim 6 was rejected as indefinite only because it depends from claim 5, the rejection of claim 6 should also be withdrawn.

Claim Rejections – 35 U.S.C. § 103

The Patent Office rejected claims 7, 8, 13, 20, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Collins (U.S. Patent No. 5,337,024) and Cooper (U.S. Patent No. 6,002,356). Applicant requests that claims 7, 8, 13, and 20 be canceled without prejudice. Applicant has amended claim 21 to be in independent form.

Regarding claim 21, the combination of Collins and Cooper fails to teach or suggest at least "a switch for applying digital modulation signals from said decoder to said divider circuit." To show this element, the Patent Office pointed to register (44) of Collins stating that it is a switch. Applicant respectfully disagrees. The register (44) disclosed by Collins latches the digital signal from the ADC (42) for processing by the adder (40). Thus, although the register (44) provides the digital signal from the ADC (42) to the adder (44), it is a latch and not a switch. Since combining Collins with Cooper fails to cure this deficiency, claim 21 is allowable.

Allowable Subject Matter

Applicant would like to thank the examiner for indicating that claims 1, 2, 4, 9-12, 14-19, 22, and 23 include allowable subject matter. Applicant has amended claims 9, 11, 14, 22, and 23

to be in independent form. Thus, in view of the discussion above, claims 1-6, 9-12, 14-19, 22, and 23 are allowable.

Conclusion

In view of the discussion above, claims 1-6, 9-12, 14-19, and 21-23 are allowable. Reconsideration is respectfully requested. If any issues remain, the examiner is encouraged to contact the undersigned attorney of record to expedite allowance and issue.

Respectfully submitted,
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